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TCT-334

Equivalent Improvement Of Cardiac Function After Delayed Reperfusion By Primary Percutaneous Coronary Intervention for ST-Segment Elevation Myocardial Infarction

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Background: Efficacy of primary percutaneous intervention (pPCI) for ST-segment elevation myocardial infarction (STEMI) within 6 hours after the symptom onset has been established, however, whether the equivalent efficacy is obtained in 'delayed' pPCI is still controversial.
Methods: We investigated 374 patients with STEMI who had undergone pPCI within 24 hours after symptom onset. They were divided into two groups: pPCI within 6 hours (Early group) and pPCI between 6-24 hours (Delayed group) after onset. Those with TIMI grade 3 at the time of diagnostic coronary angiography were excluded. ECG-gated 99m-Tc-Tetrofosmin (TcTF) and 123-I-BMIPP SPECT were performed between 7-10 days (Acute phase) and TcTF was repeated 3 months (Chronic phase) after onset. Myocardium was divided into 25 segments and segmental score was graded by 5 degrees (0:normal, 4:defect). Sum of defect scores (S-DS) were calculated from SPECT, and ejection fraction (LVEF) / left ventricular volume from QGS software.
Results: There were no significant differences of final TIMI grade or prevalence of ST resolution between two groups. Baseline myocardial perfusion and LVEF evaluated by TcTF, fatty acid metabolism by BMIPP at acute phase were not different significantly between two groups. In both early and late group, improvement of myocardial perfusion defect and LVEF were observed.

	Early Group (N=261)	Late Group (N=110)	P
Pre PCI TIMI	0.52	0.53	0.97
Peak CKMB (IU/L)	351	322	0.31
BIMPP (Acute)	21.6	21.3	0.85
TcTF (Acute)	18.9	19.4	0.73
TcTF (Chronic)	16.9	17.2	0.61
EF (Acute) (%)	46.2	45.6	0.81
EF (Chronic) (%)	53.7	51.2	0.20

Conclusion: Primary PCI for STEMI provides the improvement of cardiac function including perfusion, metabolism and LV function even when performed beyond 6 hours after the onset.

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Clinical Outcomes Of Primary Percutaneous Coronary Intervention In Elderly Versus Younger Patients Presenting with Acute Myocardial Infarction (From the KAMIR)

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Background: Elderly patients have been either excluded or underrepresented in acute myocardial infarction (AMI) clinical trials. To understand the impact of age on treatment, outcomes and complications, we analyzed the largest group of patients 75 years or older with AMI from registry.
Methods: We analyzed data from 14885 patients in the Korea Acute Myocardial Infarction Registry(KAMIR) between October 2005 and June 2008. Patients were divided into two groups: those ≥ 75years(n=2915) and those < 75years(n=11970). The main clinical outcomes were 1-year major adverse cardiovascular events(MACE) and bleeding after primary percutaneous coronary intervention(PPCI).
Results: Elderly patients had higher rates of hypertension, diabetes and previous ischemic heart disease and less angiographic success after PPCI. There were less use of short-term adjunctive and antiplatelet medications in elderly compared with younger patients. However, major bleeding rate was higher in the elderly group(0.4% vs. 0.8%, p=0.01). In elderly patents, 1-year MACE(1.5% vs. 7.5%, p<0.001) and mortality rate(4.4% vs. 10.2%, p<0.001) were found to be higher. After multivariable adjustment, age was the strongest independent predictor of 1-year MACE (odds ratio[OR]=1.753, 95% confidence interval[CI]=1.316-2.333, p<0.001) and 1-year mortality(OR=4.844, 95% CI=3.551-6.608, p<0.001).

The Main Clinical Outcomes

	< 75 years (n=6541, 82.3%)	≥ 75 years (n=1404, 17.7%)	p value
1-year MACE	286 (4.4%)	143 (10.2%)	p<0.001
1-year Death	96 (1.5%)	106 (7.5%)	p<0.001
1-year MI	18 (0.3%)	10 (0.7%)	p=0.012
1-year Revascularization	166 (2.5%)	25 (1.8%)	p=0.093

Conclusion: Elderly patients had less use of antiplatelet medications and higher rates of major bleeding, 1-year MACE and mortality. Age with 75 years or older is the strongest predictor of 1-year MACE and mortality in AMI patients undergoing PPCI in this analysis. Therefore, a thorough understanding of the prognosis and a cautious approach in management of the elderly patients with AMI are needed.

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Patient Differences by Mode of Hospital Arrival for ST-Elevation Myocardial Infarction Treated with Primary PCI

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Background: Outcomes for STEMI treated with primary PCI are improved by initiatives including pre-hospital ECG and paramedic transfer to STEMI receiving centers (SRC). STEMI patients self-presenting to a regional SRC have not been well-studied and may not have the same characteristics or outcomes.
Methods: The records for all acute STEMI patients undergoing primary PCI between May 2007 and December 2010 at an urban SRC were reviewed. Continuous and categorical variables were analyzed with standard tools.
Results: Patients who "walk-in" to a regional SRC with STEMI are significantly different from those presenting via emergency medical services with field ECGs. Non-English speaking and some minority groups are more likely to present as "walk-in" STEMIs. Patients with inferior MI, advanced Killip Class and history of MI, PCI or CVA are more likely to present via paramedics.

Patient Differences at Presentation

	SRC n = 125	Walk-in n = 107	p value
Age, years (median)	59	56	**0.008**
Male, %	74 (87)	81 (92)	ns
Black, %	29 (36)	11 (12)	**0.0011**
Hispanic, %	30 (37)	51 (55)	**0.0008**
White, %	26 (33)	18 (19)	ns
Asian, %	15 (19)	20 (21)	ns
Non-English Language, %	20 (25)	41 (44)	**0.0005**
Diabetes, %	37 (46)	36 (39)	ns
Prior MI/CAD, %	26 (33)	15 (16)	**0.0368**
Prior PCI, %	18 (23)	10 (11)	0.0951
Prior CVA, %	7 (9)	1 (1)	**0.0225**
CP Duration, min (median)	90	290	**0.0002**
Anterior MI, %	40 (50)	56 (6)	**0.0176**
Inferior MI, %	55 (69)	39 (42)	**0.0178**
Killip III-IV, %	22 (28)	10 (11)	**0.0144**
VT/VF, %	18 (22)	6 (6)	**0.0077**
Cardiac Arrest, %	10 (13)	4 (4)	0.0752

Conclusion: Marked clinical and demographic differences exist between SRC and "walk-in" patients with STEMI. Further study and improved public health education are needed to address these differences.

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Does the Increase in Mortality in Patients with Acute Myocardial Infarction Admitted on Weekends Still Exist?

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Background: Prior studies have suggested worse outcomes for acute myocardial infarction(AMI) hospitalizations on weekends.Improvement in system based practices and refined care has lead to better outcomes.There are no data on trends in outcomes of AMI patients hospitalized on weekends in recent years.
Methods: This was a cross sectional study using the Nationwide Inpatient Sample from the years 2000 to 2008.5,848,502 discharges with AMI and its related revascularization procedures were identified through appropriate ICD 9 codes.Weekend admissions were defined as all admissions between midnight Friday through midnight Sunday.The primary outcome measured was in-hospital mortality.
Results: Of the 5,848,502 hospitalizations of AMI,25.3% were admitted on a weekend.Overall,patients admitted on a weekend had significantly increased mortality(6.66% vs. 6.13%, p<0.05.Mortality trends of weekend admissions from years 2000-2008 are shown in Fig 1.Mortality of AMI patients admitted on weekends in the year 2000 was significantly higher compared to weekday admissions (adjusted HR 1.09, 95CI 1.04-1.14,p<0.001).In 2008,there was no significant difference in mortality in patients admitted on a weekend vs. those admitted on a weekday (adjusted HR 1.03, 95% CI 0.97-1.10, p=0.22).The number of cardaic catheterization procedures performed within 24 hours on weekends increased from 36.2% in 2000 to 54.5% in 2008 (p< 0.001),while on weekdays it increased from 53.6% in 2000 to 65% in 2008.

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